Towards an Effective IT Governance Structure for Organizations in Developing Economies

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ABSTRACT

The pervasive use of IT is prominent amongst organizations in developing economies. However, there is growing evidence that these economies fail to capitalize on their IT investment to transform their organizations to be competitive both locally and globally. IT-related benefits are possible with appropriate governance of the IT-related resources, and we need to broaden our understanding on the IT governance mechanics suitable for organizations in the developing economies. In this study, we adopted an initial interpretive design to obtain a deeper understanding of the IT governance (ITG) environment and conceptions of the stakeholders on effective IT governance structures for the developing economies. We found that the presence of an IT Strategic Planning Committee, Multiple level of authority, and a Forum for informal discussions as the crucial components of an ITG structure in developing economies.

Keywords

Developing economies, IT governance, IT capabilities, resource centric approach, competitive advantages.

INTRODUCTION

The critical dependence and investments in IT amongst the developing economies is increasing (Abu-Nusa, 2007). Major IT investments also channel into the developing markets through the international donor agencies such as the Asian Development Bank (ADB), the World Bank, the various United Nations (UN) agencies, private and multinational corporations as well as the local government agencies. For developing economies, investment in IT is a critical enabler of growth, development, and modernization in the current global society (Prasad, Green and Heales, 2011). Evidence indicates that global IT investments is expected to surpass US$3.6 trillion dollars and a significant portion of this investment will be channeled into developing economies (Gartner, 2011). IT investment failures in the developing economies is higher compared to industrialized economies (Heeks, 2002). Evidence indicated that 35 percent of IT investments in developing economies will result in total failure while 50 percent will partially fail (Heeks, 2002). These statistics are alarming, as the developing economies do not have the luxury to waste scarce financial resources on such projects. Extant research notes well on the specific factors that contribute to these high failure rates[1]. These factors include a lack of proper governance infrastructure, weak regulatory environment, wide-spread corruption, shortage of specialized labor, political instability, under-develop IT infrastructures and so on. This high IT investments failure rate in the developing economies hinders their ability to achieve global convergence (Kenny, 2001). The ineffective use of IT contributes to the developing economies being on the wrong side of the digital divide (Heeks, 2002).

Effective use of IT resources requires effective IT governance (ITG) structures. Effective ITG structures provides strategies that promotes the effective management of IT resources so that these IT resources contribute to business value (Lainhart, 2001). ITG is becoming the top management's agenda for today's organizations (Brown and Grant, 2005; Lewis, 2008). For developing economies, the implementation of an effective ITG model is pertinent. Effective ITG does not only assure organizations that IT investments will fulfill their objectives, it also allows stakeholders such as donor agencies and investors a transparent platform to monitor and measure the performance of their investments in various markets.

[1] See for example the works of (Lyytinen and Hirschheim, 1987; Heeks, 2002).

A number of ITG standards and models have been developed and are being adopted by numerous organizations (Larsen, Pedersen, Viborg Andersen, 2006). Evidence indicates that organizations that have implemented ITG generate 40 percent higher IT returns compared to those organization who haven't (Weill and Ross, 2005). Extant literature has discussed at length various examples of effective ITG structures[2]. However, the fit of these structures in the developing economies context is a concern. Implementing ITG model suitable for developing economies is complex (Abu-Nusa, 2007). Developing economies lack the necessary corporate governance mechanisms that provide the foundation of an effective ITG model. Moreover, a correct ITG model does not exist as ITG models are context specific (Agarwal and Sambanurthy, 2002; Weill and Ross, 2005). An in-depth understanding of the local IT environment is important to implement an effective ITG structure for the organizations in the developing markets.

The overall aim of this study is to suggest an effective ITG model for the organizations in the developing economies. We adopt the agency theory, and the systems oriented theories to provide the philosophical arguments on the need for such structures. We then adopt a resource centric approach to provide suggestions on ways to develop effective ITG structures. The resource centric approach argues that the optimal re-organization of organizational resources (including IT) form the basic mechanisms of an ITG structure. The extant literature offers limited knowledge on the nature of these structures in the developing economies.

This study seeks to bridge this gap of the literature. We seek to provide an in-depth understanding about the nature of these structures and indentify the governance mechanisms that form such structures. This paper reports on the key conceptions of effective IT governance structures derived through an interpretive design. We found that Strategic Planning Committee, Multiple level of authority and a Forum for informal discussion are important governance mechanisms in the developing economies. The rest of this paper progresses as follows. The next section presents an overview of ITG and Corporate Governance. Then, we discuss the theoretical framework of this study. This follows discussion of the research design for the current and reported stage of the study. We then present the results of this study. The final sections discuss the findings, and conceptualize a model of IT governance for organizations in the developing economies.

THE CONCEPT OF ITG AND CORPORATE GOVERNANCE

Corporate governance is the system to direct and control organizations (Cadbury Committee, 1992). It emphasizes roles and responsibilities of the Boards of Directors (Board) and the establishment of organizational structures and processes that ensures the effective implementation of corporate strategies (Cadbury Committee, 1992). ITG relates to the distribution of IT decision rights and responsibilities among organization stakeholders and the procedures and mechanisms for making and promoting strategic IT decisions (Weill and Ross, 2005). The major emphasis of ITG is on the structure of relationships and processes related to developing, directing and controlling IT resources in order to achieve the organization's goals through value adding contribution, balancing risks versus return over IT resources and managing IT processes (Abu-Nusa, 2007). Despite the difference in focus, ITG is an integral component of corporate governance. Effective ITG structures draws on good corporate governance principles to manage and use IT to fulfill corporate objectives (Weill and Ross, 2005). Effective ITG structures also affirms an organization's success by both efficiently and effectively deploying secure and reliable information through the application of new technology (Abu-Nusa, 2007).

Today, ITG has become the top management agenda for organizations (Brown and Grant, 2005; Lewis, 2008). Despite its significance, the understanding of ITG is very much disparate in the IS literature. Extant studies have associated ITG with numerous business aspects such as strategic alignment, delivery of business value through IT, performance management, risk management, locus of control, accountability and governance structures etc (Brown and Grant, 2005). Consequently, numerous suggestions exist on how an organization can effectively develop and evaluate the performance of their ITG structures.

The implementation of an ITG model does not necessarily guarantee related IT benefits (Powell and Dent-Micallef, 1997). Organizations need to ensure that their chosen ITG model performs consistent to certain expectations. As such evaluating the performance of ITG has become an important issue for organizations (Abu-Nusa, 2007). The establishment of benchmarks and metrics that go beyond the traditional financial measures is required. Extant literature indicates that these supplementary indicators should include those aspects of the business that is strategically important, so that organizations can 'holistically' evaluate their ITG performance (Wilkes, 2004). Examples of such indicators includes the economic benefits of IT, the level of risks being mitigated and the intangible elements of IT investments (Bowen, Yin, Cheung and Rodhe, 2007). Organizations can also effectively measure the performance of their ITG using the resource centric approach. Under this

[2] See for example the works of (Sambamurthy and Zmud, 1999; Weill and Woodham, 2002; Weill and Ross, 2005)

approach, an ITG structure is effective if it results in the creation of unique IT capabilities that promote competitive advantage.

THEORETICAL FRAMEWORK

The agency theoretical framework relates to the need for governance of organizational resource (Mulili and Wong, 2010). This theory assumes the existence of an agency relationship[3] in an organization, which results in agency costs. Agency costs refer to a decrease in shareholders wealth because of management opportunist behavior. Internal governance structures like an ITG structure can effectively reduce the instances of such costs (Donald and Davish, 1991).

The agency theory argues for a more imposed form of governance structure. The theory assumes that governance structures are just monitoring mechanisms that keep agents behavior in check. As such, governance structures under this theory may fail to add value to an organization. The assumption of this theory might not hold true in developing economies. Eighty to ninety percent of organizations in developing economies are small and medium entities (Saleh and Ndubisi, 2006). This situation indicates the presence of dominant shareholders that could influence the operation of an organization. Therefore the major motive of implementing ITG structures in developing economies will be different to that of the 'monitoring mechanism' as argued by the agency theory. Explaining why developing economies implement such structures in the first place will require a much broader theoretical approach.

The open system theory of legitimacy, stakeholder and institutional theory offers complementary theoretical underpinnings for the need for ITG structures in the developing economies context. The legitimacy theory posits that organizations continuously seek to ensure that they operate consistent with societies expectations (Deegan, 2006). The stakeholder theory assumes that the organization is continuously managing relationships with stakeholders for survival reasons while the institutional theory assumes that the organization is also being proactive about the current developments in the business environment by maintaining a good image with other organizations in the industry. These three theories emphasize the importance of adopting a proactive approach to ensure survival. Organizations may need to go beyond and voluntarily implement organizational structures that assure its indefinite survival. This voluntary implementation of governance structures signifies that governance is a value adding activity rather than just a mere monitoring mechanism. In sum, these theories provide a more holistic understanding on the need for governance structures in developing economies. The above discussions justify the need for organizations to implement ITG structures. Equally important is the expertise for effective governance of their organizational resources. The resource centric approach provides the theoretical underpinning that underlies ways to govern organizational resources, the IT resources.

A resource centric approach, the resource based view of the firm (RBV) views organizations as a bundle of resources (Barney, 1991). The theory assumes that organizations posses resources (including IT) that differentiate them from their competitors (Barney, 1991). Resources are valuable if they are valuable, rare and costly to imitate (Barney, 1991). These values assist organization to leverage other resources to sustain their competitive advantages and enjoy superior long term performance (Barney, 1991; Grant, 1991; Wade and Hulland, 2004). Thus, effective leveraging of IT resources is contingent upon how an organization synchronize its IT capabilities with other organizational capabilities (Prasad, Heales and Green, 2010). The synergy of these capabilities will result in the creation of higher-level capability which is distinct to an organization- an effective ITG structure. Effectively, this means that organizations will need to first identify their unique IT governance capabilities and then arrange them in a unique way. The dynamic capability framework provides an in-depth insight on how ITG structures are developed, thus providing the mechanics that frame such governance structures.

Organizations dynamic capabilities relates to the ability to integrate, build reconfigure internal and external competencies (Teece, 2007). The arrangements of an organizations governance capabilities would be better performed internally (Coase, 1937). IT related know-how is crucial in achieving the optimal combination of governance capabilities that will drive business value. Organization will therefore need to effectively harness this knowledge and identify the synergy between their existing governance capabilities so that they can effectively leverage their IT resources. Understanding how well these governance capabilities synchronized is rather complex as the process occurs with various magnitude and variability with the business processes (Prasad et al., 2010). These various arrangements of governance capabilities should extract those unique competencies that are already embedded in organizations processes. The innovative transformation of organization processes as a result of this governance capabilities re-arrangement is the essence of dynamic capability and competitive advantage (Teece, 2007). Overall, such re-arrangements create a high-level coherence of processes within an organization, which is

[3] This relationship is evident in listed companies where there is separation between owners and management.

difficult to imitate. Therefore, the arrangement of the governance capabilities will result in this unique coherence, and provides the mechanics of effective ITG structures.

RESEARCH DESIGN

The theoretical framework highlights the need for organizations to organize their resources as this provides the structures for ITG. Knowledge of resource arrangement will require an approach that allows the researcher to extract reality from an organization, thus the use of an interpretive research approach. An interpretive approach is useful in disentangling the diversity of issues surrounding the notion of ITG (Prasad et al., 2011). This approach offers an in-depth view at the dynamic relationship that exists within an organization regarding the governing of IT resources. In addition, the interpretive approach interprets the perspectives of the people involved enabling the researcher to identify the shared meaning and experiences that might exist (Walsham, 2006). Conducting interviews is a critical component of this approach as it enables in-depth access to people, issues and data (Walsham, 2006).

We wanted to obtain views from organizations that had good ITG practices. High performing organizations and heavy IT reliant organizations formed the population of this study. Our sample size consists of organizations that were selected at random from this population. Random selection reduces the chances of sample bias as it offers a chance for everyone an equal chance to be chosen (Moore and MacCabe, 2005). Out of the 12 companies we approached only five organizations agreed to participate. Extant ITG literature provided the basis for developing our interview instrument. This instrument as well as the list of our proposed participants were then verified and validated by an independent party. Once interview confirmation was received, a copy of the interview schedule was e-mailed to the participants prior to the actual interview session. Sending the interview questions can improve the quality of the participant's responses as they know what the nature of discussion will be. Our interview subjects consist of personals at different managerial level. Our interview sample is such because we wanted to gain an understanding of ITG at different level of an organization. This enables a more holistic view of ITG in an organization. Out of those approached only ten personals from five different organizations agreed to participate. These participants form the sample of our study.

DATA COLLECTION AND ANALYSIS

The semi structured interviews lasted from twenty to thirty minutes. Collecting views from different level of the organizations enable the researcher to understand the various IT governance viewpoints that exists in organizations. In addition, it also enables the researcher to identify common conceptions that represent key IT governance capabilities that enables the organization to effectively leverage its IT resources. We initially determine the level of ITG understanding of the interviewees before the session proceeds.. The interviews were recorded and transcribed. We then analyzed the transcribed contacts using a thematic approach. This approach requires us to identify and isolate common themes relating to possible IT capabilities needed for developing an ITG model. The work of (Dey, 1993) provided the direction on how to carry out our analysis. We initially established a unit of analysis, which were ranges from a few words to complete sentences. We then code these concepts to indentify the conceptions prevalent in a section of the transcription. Finally, we established broader category where these various conceptions could be classified. For validity and verification purposes, the transcribed interviews were also given to the interviewee.

Interviewee	Position	Industry
1	IT Manager	Banking
2	Director IT	Service (Tertiary)
3	Manager Sales	Insurance
4	Board Director	Insurance
5	IT Manager	Service (Tertiary)
6	General Manager	Banking
7	Manager Risk	Banking
8	Board Director	Retail
9	Manager Corporate Governance	Banking
10	Manager Customer service	Banking

Table 1. Interviewee Demographics

RESULTS AND DISCUSSIONS

This section discusses the three broad themes from the interviews. This broad theme forms the framework where organizations can develop their ITG.

Broad Conception	Key Themes
Strategic Planning Committee	Collaborative Strategy Planning, Board/Management Subcommittee, Shared Decisions making, Collaboration,
Multi level Authority	Budget approval, IT investment decision,
Forum for Informal Discussion	Collaboration, shared decision making, Shared responsibility

Table 2. Common Themes for ITG structures in Developing economies

Strategic Planning Committee

The concept of dynamic committee dedicated to identifying the IT need area of an organization was highlighted by some interviewees. Membership of this committee should be drawn from IT/business unit managers and independent party well versed with IT. This suggestion indicates the knowledge gap between the board (those who make strategy decisions) and lower management (those that implement strategies into actions). This committee might work well with family and privately owned organization. These organizations typify the heavy concentration of decision making to the hands of a few individuals (usually family members) that makes up the board. The purpose of this committee is to inform the board about the IT reality on the ground so that the board is able to make an informed decision regarding the strategic direction of the organization. The composition of this committee also highlights the fact that majority of the IT-know in an organization is located at the lower level and tactical level of operations. Some interview extracts that supports the notion of such a committee are as follows;

"I think the board also need to consider the view points of all unit managers and not only the IT department. IT affects all the organizations operations which means it also affect the way that our performance is assessed. We need to all sit together and identify areas of improvement and contribute to the IT decision making of the organizations". T2

"*As the Sales Manager, I know exactly what the current improvements are needed for my department. I consult the IT managers to see how he can modify the system to cater for this need. It's the same for other departments. Managers knows better what is needed "T3*

"*We do have an IT steering committee, however I feel that members should also include managers from other departments. I know it's a bit of a hassle to have such a large committee but at the end of the day, the decision they make will affect the way my department operate*." T7

"*We have a Product and Research Team that closely works with the IT department and other managers. The main objective of this department is to identify the need area in our various Pacific branches. Once the proposals are approved by the board, they liase with the IT department to come up with the system suited for the Pacific islands. But in terms of governance, everything comes from the top which is a generic structure kind of thing*". T10

" *IT is all about integration, making things easy, promoting close collaboration. This can only be achieved if all us are involved in deciding what system is appropriate because we are the one who will use it. So it is only fair that we have say in the upgrades or the replacement of our IT systems*." T9

"I have to admit we lack the specific IT knowledge. We have to seek IT consultants to help us reading our IT decisions. Our decisions is largely affected by the proposals of the Risk sub-committee but at times we seek an independent viewpoint. Because of the nature and the significance of IT decisions they are made in a collaborative environment so that we can be assured that it will achieve its purpose in the organization". T1

Multiple Level of Authority

This conception is associated with the location of decision rights regarding the approval of IT projects at various levels of organizations. Authorization level is dependent upon the value of the investment, where certain IT investment value will require approval of a higher authority and might require rigorous analysis. Most of the interviewees pointed out that the decentralization of IT purchases to the department manager is effective because it speeds up the procurement of urgent IT needs. Determining the right degree of authority of middle managers is crucial. As indicated by some interviewees;

"*In terms of IT decisions, small IT decisions such as buying laptops etc do not require rational decisions. But if there is an outlay of $100k or more than $50k that's where we have to adopt the policies of governance in place*"T4

"In our budget, we are allocated certain limits of purchase that we can approve without board approval. ..This is actually good because we don't face the hassle of running around for approval..Yes I agree that for all major IT investment like the proposal to replace our current BANK system needs to be approved by the board after major consultation with us the managers"T5

"*I report directly to the board regarding issues that are related to risk management of this company. I submit a report on a six monthly basis regarding the status of our accounts, you know those account holders who are late in their loan repayments, the number of high risk accounts, estimated losses etc. ..part of my job too is to inform the board regarding the purchase activity of each department. Every now and then we conduct surprise audits to see whether those purchase were justified or not*"T7

Forum for Informal Discussion

A common argument that we found from the interviews is the need for consensus IT decision making. A collaborative environment where all internal stakeholders participate and contribute to decision making plays an important role in how effective organization manages change being brought about by IT. Lower level managers are less likely to resist changes if they are made part of the decision making process. An open communication approach which encourages lower management to play a prominent role is important. As some of the interviewees indicated;

" *I personally do not like the idea of things being forced down from the top without adequate consultations. We have had our experience of IT projects failures that could simply be avoided if a proper consultation was carried out within the organizations. The success and failure of an IT project rests with those who will use it. How do you expect us to perform using a complex system?"* .T1

"*Our head office decides when there is a need for IT investment. So as far as we are concerned, we are just listening to what head office is saying. We just put in our recommendation in what we feel should be improve and they have to tell us the green light or not. In the current system, we have a lot of components that are not relevant. Some components we don't need but its there. Since our IT needs are handled by the New Zealand head office, our hands are really tied at the moment*" .T2

"*I feel that we could do more in terms of creating awareness amongst our employees regarding where we are heading. The problem is that we hardly get a chance to sit and discuss with the board, you know..have informal discussion where we raise our concerns etc. I think we could achieve more if we do away with all this bureaucracy.*"T10

"*We carry out back ground studies, corporate will need to see the need area before it is implemented. So 2 of our staffs went down to actually give corporate a feel of the need in terms of IT here in Fiji. It was not only us but all other pacific branches also before they come to a common platform of how they are going to implement the system".* T6

Summary

In general, an ITG model clearly determines who has the authority and the responsibility for making IT related decisions and establishes mechanisms and policies that should be used to measure and control the way IT decisions are formulated and implemented. A key component of an ITG model is getting the right people to be involved with IT decision making. However, the appropriate location of IT decision making rights in developing economies is different to developed economies. Constrained with limited experience IT personals, the bulk of the IT know-how in the developing economies is largely concentrated at operational level. This means that managers at operation level should play a major role in the formulation of IT decisions. This also indicates that the IT decision framework has a much flatter structure instead of the hierarchy structure predominantly discussed in extant literature.

The three structures discussed above signify the current views of ITG that is prevalent in developing economy. Our observation indicates that ITG structures for developing economies require a bottom-up approach rather than a top-down

approach. For developing economies a major characteristic of its ITG structure would be the active involvement of those at IT-usage level in making IT decision making. This means that ITG no longer becomes the sole responsibility of the board but the organization as a whole. The board however still plays a major role in setting the tone of governance in the organization. We believed that the effective governance of IT resources is possible if the board allows lower level management to part take in all major IT decision making.

Our preliminary result does not provide a holistic view of the ITG model suitable for developing economies. A complete ITG model would be one that includes performance measurement mechanisms that enables organizations to evaluate the effectiveness of such structures. This paper proposes the adoption of the capability approach as indicated in the works of (Prasad et al., 2010; Prasad et al., 2011). The ITG structure should enable an organization to create unique IT capabilities that are costly to imitate. The effective leveraging of IT resources is contingent upon the presence of these capabilities. As such, these sustainable IT capabilities provide an ideal indicator for effective ITG structures. The organizations ability to synchronize its IT resources with these capabilities should positively impact the performance at process level and ultimately the performance at firm level. Figure 1 represents the preliminary results of what an effective ITG structure might be like for developing economies.

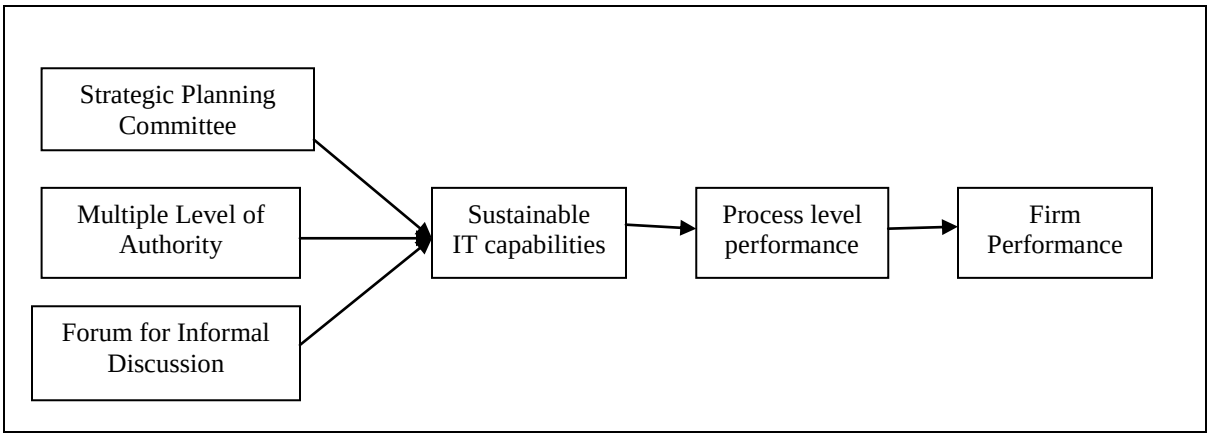

Figure 1. Preliminary Research Model

CONCLUSION

The investment of IT in developing economies is increasing. IT has been used pervasively in business processes and is directing how these key processes function. There is a growing body of literature arguing that IT in itself does not generate value but rather how these resources are being leverage that contributes to performance. This paper presents an approach to understanding how IT resources can be effectively governed to create value for the organization. It is also intended to provide a richer understanding to stakeholders in developing economies on the true potentials of their IT resources. This paper suggests an ITG model using the RBV theory which advocates for IT capability building. Identifying and blending these IT capabilities provides a framework where IT resources can be effectively governed. As this paper progresses, we hope to include testable hypothesis, strengthen the quality of our findings and be able present the preliminary results of a completed ITG model that is suitable for the developing economies.

REFERENCES

1. Abu-Nusa, A. A. (2007) Exploring Information Technology Governance (ITG) in Developing Countries: An Empirical Study, *The International Journal of Digital Accounting Research,* **7**,14, 73-118.
2. Agarwal, R. and Sambanurthy, V. (2002) Principles and Models for organising the IT function, *MIS Quaterly*, 1,1, 1-16.
3. Barney, J. B. (1991) Resources and Sustained Competitive advantage, *Journal of Management*, 17, 1, 99-120.
4. Bowen, P. L., Yin, M., Cheung, D. and Rodhe, F. H. *(2007) Enhancing IT* governance practises: A model and case study of an organisation's efforts, *Accounting Information Systems*, 8, 191-221.
5. Brown, A. and Grant, G. (2005) Framing the Fr*ameworks: A Review of the IT g*overnance research. *Communications of the Association for Information Systems*, 15, 696-71.
6. Cadbury Committee. (2002) The Financial Aspects of Corporate Governance. [online] Available at:< http://www.ecgi.org/codes/documents/cadbury.pdf> [Accessed 24 February 2012].

7. Coase, R. (1937) The Nautre of the Firm, *Economica*, 4, 386-405.
8. Deegan, G. (2006) Financial Accounting Theory, McGraw-Hill Australia Pty Limited, Level2,82 Waterloo Road, North Ryde,NSW 2113, Australia.
9. Dey, I. (1993) Qualitative Data Analysis: A user friendly guide for Social Scientist. London, Routledge.
10. Donald, T. and Davish, J. (1991). Stewardship Theory or Agency Theory: CEO Governance and Shareholder Returns, *Australian Journal of Management*, 16, 49, 50-53.
11. Gartner. (2011) Gartner Says Worldwide IT Spending to Grow 5.1 Percent in 2011, [online] Available at: <http://www.gartner.com/it/page.jsp?id=1513614> [Accessed 20 October 2011]
12. Grant, R. B. (1991) A resource based theory of competitive advantage: Implication for Strategy formulations, *California Management Review*, 33, 114-135.
13. Heeks, R. (2002) Information System in developing countries: Failure, Success and Local Improvisations, *The Information Society*, 18, 101-112.
14. Kenny, C. (2001) The Internet and Economic Growth in Less-developed countries: A Case of Managing Expectations?, *Oxford Development Studies*, 31, 1, 99-113.
15. Lainhart, J. W. (2001) An IT Assurance Framework for the Future, *Ohio CPA Journal*, 60, 1, 19-23.
16. Larsen, M. H., Pedersen, M. K, and Viborg Andersen, K. (2006) IT Governance: Reviewing 17 IT Governance Tools and Analysing the Case of Novozymes A/S, *Proceedings of the 39th Hawaii International Conference on Systems Science*, January 04-07, Hawaii, USA.
17. Lewis, E. (2008) Principles and the Governance of IT, *19th Australasian Conference on Information Systems*, December 03-05, Christchurch.New Zealand.
18. Lyytinen, K., and Hirschheim, R. (1987) Information System failures: A survey and classification of the empirical literature, *Oxford Surveys in Information Technology*, 4, 257-309.
19. Moore, D. S. and MacCabe, G.P. (2005) Introduction to the Practice of Statistics, W H Freeman and Co (Sd), 5th edition.
20. Mulili, B. M., and Wong, P. (2010) Corporate Governance Practices in Developing Coutnries: The Case of Kenya, *International Journal of Business Administration*, 2, 1, 14-27.
21. Powel, T. C. and Dent-Micallef, A. (1997) Information Technology as Competitive Advantage: The role of Human, Business an Technology Resources, *Strategic Management Journal*, 18, 5, 375-405.
22. Prasad, A., Green, P. and Heales, J. (2011) IT Governance in Collaborative Organisations, *Proceedings of the AMCIS 2011*, August 04-07, Detroit, USA.
23. Prasad, A., Heales, J. and Green, P. (2010) A capabilities-based approach to obtaining a deeper understanding of information technology governance effectiveness: Evidence from IT steering committees, *International Journal of Accounting Informations*, 11, 3, 214-232.
24. Saleh, A. S. and Ndubisi, N. O. (2006) SME Development in Malaysia: Domestic and Global Challenges, *Working Paper 06-03*, Department of Economics, University of Wollongong, 1-27.
25. Spafford, G. (2003) The Benefits of Standard IT Governance Frameworks, [online] Available at :< http://www.itmanagementonline.com/Resources/Articles/The_Benefits_of_Standard_IT_Governance_Frameworks.pdf> [Accessed 18 February 2012].
26. Teese, D. (2007) Expliciating Dynamic Capabilities: The Nautre and Microfoundations of (Sustainable) Enterprise Performance, *Strategic Management Journal*, 28, 1319-1350.
27. Wade, M., and Hulland, J. (2004) Review: The Resource-Based view and Information Systems Research: Review, Externsion, and Suggestions for future research, *MIS Quaterly*, 28, 1, 107-140.
28. Walsham, G. (2006), Doing Interpretive reseach, *European Journals of Information Systems*, 15, 3, 320-330.
29. Weill, P. and Ross, J. (2005) How Effective is Your IT Governance, *Center for Information Systems Research*, MIT Sloan School of Management, Research Briefing.
30. Weill, P. and Woodham, R. (2002) Don't Just Lead, Govern: Implementing Effective IT Governance, *Center for Information Systems Research*, MIT Sloan School of Management, CSIR Working Paper No 4237-02.

31. Wilkes, J. (2004) Corporate Governance and Measuring Performance, *Measuring Business Excellence*,8, 4, 13-16.